

Pascopyrum smithii - Nassella viridula Herbaceous Vegetation

COMMON NAME	Western Wheatgrass - Green Needlegrass Herbaceous Vegetation
SYNONYM	Western Wheatgrass - Green Needlegrass Mixedgrass Prairie
PHYSIOGNOMIC CLASS	Herbaceous Vegetation (V)
PHYSIOGNOMIC SUBCLASS	Perennial graminoid vegetation (V.A)
PHYSIOGNOMIC GROUP	Temperate or subpolar grassland (V.A.5)
PHYSIOGNOMIC SUBGROUP	Natural/Semi-natural (V.A.5.N)
FORMATION	Medium-tall sod temperate or subpolar grassland (V.A.5.N.c)
ALLIANCE	PASCOPYRUM SMITHII HERBACEOUS ALLIANCE

CLASSIFICATION CONFIDENCE LEVEL 1

USFWS WETLAND SYSTEM

GLOBAL RANGE

Theodore Roosevelt National Park

Stands of *Pascopyrum smithii* - *Nassella viridula* occur throughout Theodore Roosevelt NP as small patches in swales, moderate slopes, and drainages with fine-textured soils.

Globally

This community is found in Wyoming, Montana, Saskatchewan, Manitoba, North Dakota, and South Dakota.

ENVIRONMENTAL DESCRIPTION

Theodore Roosevelt National Park

This community is found on the deep, well-developed, fine textured soils associated with slight concave depressions on the uplands, and level or nearly level slopes that occur below moderately steep slopes of any aspect.

Globally

This community is found at the bottom of narrow valleys, on stream terraces, and on rolling uplands (Jones 1992, USFS 1992). Soils are fine-textured (clays, silty clays, clay loams, or rarely loams) and well-drained. The soil profile is typically well developed. The parent material is siltstone and mixed sedimentary rock (USFS 1992). This community usually occurs on level or nearly level ground but sometimes may be on moderate slopes of any aspect.

MOST ABUNDANT SPECIES

Theodore Roosevelt National Park

<u>Stratum</u>	<u>Species</u>
Herbaceous	<i>Nassella viridula</i> , <i>Pascopyrum smithii</i>

Globally

<u>Stratum</u>	<u>Species</u>
Graminoid	<i>Nassella viridula</i> , <i>Pascopyrum smithii</i>

CHARACTERISTIC SPECIES

Theodore Roosevelt National Park

Nassella viridula, *Pascopyrum smithii*

Globally

Nassella viridula, *Pascopyrum smithii*

VEGETATION DESCRIPTION

Theodore Roosevelt National Park

This community typically has relatively high foliar cover (>50%). *Pascopyrum smithii* and *Nassella viridula* are the dominant species. The relative contribution of these two species varies with moisture regime. *Nassella viridula* cover increases on the more mesic sites while *Pascopyrum smithii* increases on the somewhat more drier sites. *Bouteloua gracilis* and *Artemisia ludoviciana* are common secondary species and follow a similar pattern with *B. gracilis* becoming more prominent on the drier sites and *A. ludoviciana* on the more mesic sites. This community is often closely associated with *Symphoricarpos occidentalis* communities.

USGS-NPS Vegetation Mapping Program
Theodore Roosevelt National Park

Globally

This community is dominated by midgrasses, generally between 0.6 and 1 m tall. The vegetation cover tends to be moderate to high, with almost all of the canopy provided by graminoids (Redmann 1975, USFS 1992). The dominant species are *Pascopyrum smithii* and *Nassella viridula*, although *Elymus lanceolatus* (another rhizomatous wheatgrass that is similar in morphology and ecology to *Pascopyrum smithii*) is the dominant species in some stands. At least 5% canopy cover of *Nassella viridula* may be diagnostic for this association. Other common grasses are *Stipa comata*, *Koeleria macrantha*, *Poa secunda* (= *Poa juncifolia*), *Poa pratensis*, *Sporobolus cryptandrus*, and, on sandier soils, *Calamovilfa longifolia*. Shorter graminoids are less common, but may include *Bouteloua gracilis*, *Carex duriuscula* (= *Carex eleocharis*), *Carex filifolia*, *C. inops ssp. heliophila*, and *C. pensylvanica*. These species are present in many stands, but they usually contribute little cover. The wheatgrass basin association of Nebraska (Steinauer and Rolfsmeier 1997), which may belong to this association, also contains *Schizachyrium scoparium*. Cheatgrasses (*Bromus commutatus*, *Bromus japonicus*, *Bromus tectorum*) are present in many stands and contribute substantial cover in some. The forbs *Aster falcatus*, *Astragalus spp.*, *Achillea millefolium*, *Sphaeralcea coccinea*, *Artemisia ludoviciana*, *Lepidium densiflorum*, and *Vicia americana* are also typical of this community. *Artemisia cana ssp. cana* or *Artemisia tridentata ssp. wyomingensis* may be present, often as scattered shrubs contributing little cover. Stands with denser shrubs are transitional to shrub-herbaceous vegetation.

CONSERVATION RANK G3G4. The G4 rank is based on the broad geographic distribution and the relatively broad environmental requirements of this association. The prevalence of cheatgrass in many stands, though, may necessitate a review of this rank.

DATABASE CODE CEGL001583

SIMILAR ASSOCIATIONS

Pascopyrum smithii - *Bouteloua gracilis* - *Carex filifolia* Herbaceous Vegetation (Drier graminoids, such as *Bouteloua gracilis* or *Carex filifolia*, tend to predominate in this association.)

COMMENTS

REFERENCES

- Bear Creek Uranium Mine Application. No date. Unpublished report No. 399 prepared for Wyoming Department of Environmental Quality, Land Quality Division, Cheyenne, WY.
- DeVelice, R.L., J. Lichthardt, and P.S. Bourgeron. 1991. A preliminary classification of the plant communities of northeastern Montana. Prepared for the Montana Natural Heritage Program. Helena, MT. 144 pp.
- Hirsch, K.J. 1985. Habitat type classification of grasslands and shrublands of southwestern North Dakota. Ph.D. Thesis. NDSU, Fargo, ND.
- Johnston, B. C. 1987. Plant associations of region two: potential plant communities of Wyoming, South Dakota, Nebraska, Colorado, and Kansas. Edition 4. USDA Forest Service, Rocky Mountain Region. R2-Ecol-87-2. 429 pp.
- Jones, G. 1992. Wyoming plant community classification (Draft). Wyoming Natural Diversity Database, Laramie, WY. 183 pp.
- Redmann, R. E. 1975. Production ecology of grassland plant communities in western North Dakota. Ecol. Mono. 45:83-106.
- Stoecker-Keammerer Consultants. No Date (b). Coal Creek Mine Application No. 483-T1, on file at Wyoming Department of Environmental Quality, Land Quality Division, Cheyenne.
- United States Forest Service. 1992. Draft habitat types of the Little Missouri National Grasslands. Medora and McKenzie Ranger Districts, Custer National Forest. Dickinson, ND.
- Western Resources Development Corporation. No Date (b). North Antelope Mine Application No. 532-T2. On file at Wyoming Department of Environmental Quality, Land Quality Division, Cheyenne.